REMARKS

Claims 1, 5, 8, 9, 14, 16 and 25-27 are pending and stand ready for further action on merits. Claim 1 has been amended to more clearly define the invention. No new matter has been added by way of the above-amendment.

[I] Interview

Applicants note with appreciation that the Examiner has conducted an interview with Applicants' Representative, Garth M. Dahlen, Ph.D., Esq. (No. 43,575) on March 21, 2006.

On the Interview Summary Form, the Examiner states:

> Applicant's representative wanted to discuss what appears to be the difference between the prior art and the instant claims. In this regards, it was argued that the surface-treated layer distinguishes from the prior art because it was formed by an oxidizing reaction or chemical reaction. The examiner then contended that the present claims were construed as product-by-process and thus applicant needs to provide objective evidence (i.e. unexpected results/different structure to overcome it in view of the substantially similar 3 layer structure of the prior art. It was also proposed to amend the claims to include that the layers are either "in direct contact" and/or "in contact with a primer." Applicant also discussed the adhesive strength of the adhesive layer as shown in Table 1. The 112 issue and new matter would be resolved if applicant amend the claims to recite "fusedly bonded with heat" as proposed.

We now provide further details of the Interview as the details relate to the individual rejections.

[II] Issues under 35 U.S.C. § 132(a) and 35 U.S.C. § 112, First Paragraph

The Examiner has objected to the Amendment dated December 6, 2005 under 35 U.S.C. § 132(a) for adding new matter to the disclosure and has rejected claims 1, 5, 8-9, 14, 16, 25, 26 and 27 under 35 U.S.C. § 112, first paragraph as containing new matter.

Applicants respectfully traverse the rejection and objection.

Specifically, the Examiner indicates that the phrase "thermally bonded thereto" as added to new claim 1 is "new matter." As discussed during the Interview, the Examiner indicated that amending this phrase to be "fusedly bonded with heat thereto" would overcome the objection and rejection. Based on the above amendment which is equivalent to the amendment discussed during the Interview, Applicants respectfully request that the Examiner withdraws the objection and rejection.

[III] Prior Art Based Issues

The prior art based rejections are as follows:

A. Claim 1 is rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the Japanese publication 54-99972 (hereinafter referred to as "the JP'972 publication").

B. Claims 1 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nonaka et al. 2002/0138958.

C. Claims 1, 5, 8-9, 14, 16 and 25-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Japanese document JP 11-086808 (herein called "the JP'808 document") in view of Nonaka et al. 2002/0138958.

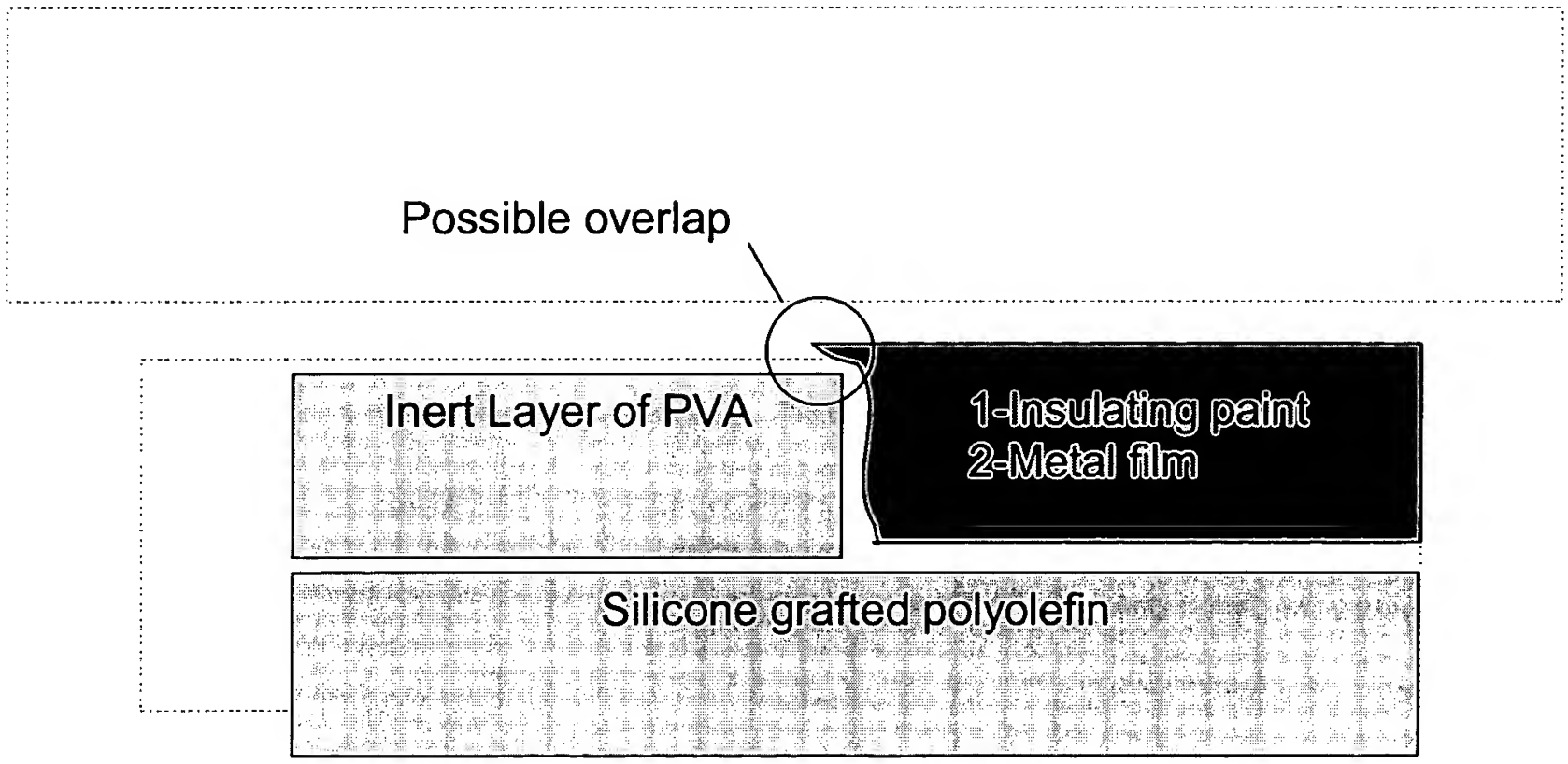
Applicants respectfully traverse the rejections.

[III-A] JP '972-

It is Applicants' position that JP '972 teaches a resin/metal laminate, which has a structure that is not identical to the laminate according to the present invention. The laminate of JP '972 is not directed to protection of an electrode as in the present invention but is a flexible printed board in which the metal layer in a printed pattern is formed by electrodeposition on a specific polyethylene sheet. The polyethylene sheet is treated so as to make the sheet surface inactive in a specific print pattern and the electrodeposition of the metal layer is effected on the remaining surface without being inactivated. JP '972 does not teach surface treatment of metal layer for facilitating adhesion of the resin adhesive layer onto the metal layer as taught by the present invention. Thus, JP '972 has nothing to do with the present invention.

Applicants respectfully submit that the Examiner is misreading the abstract of JP '972. The Examiner believes that the metal layer is formed over the inert layer. This is not true. The metal layer is formed directly onto the polyolefin portion which is not covered by the inert layer. In other words, the metal layer and the inert layer are in the same plane and sit side-by-side.

However, the Examiner stated during the Interview, that the Examiner believes that there may be slight overlap as in the following drawing:



The Examiner believes that this small portion where there may be overlap constitutes the inventive three layer laminate.

However, Applicants respectfully disagree. The polyolefin sheet is treated so as to make the sheet surface inactive in a specific print pattern and the currentless deposition of the metal layer is effected on the remaining surface without inactivated. A currentless metal plating on a non-metallic substrate is effected on an activated surface of the substrate, as well known in the relevant technical field. Namely, the metal ion in the currentless metal-deposition liquor will deposit as metal on the activated site of a surface in the presence of a reducing agent but not be deposited on not-activated site of the surface. Thus, there is ***no possibility of overlapping*** of the not-activated layer (inert layer of PVA) on which currentless metal deposition is prohibited, over

the metal layer which is formed by metal deposition exclusively on activated site of the substrate by currentless metal plating technique in JP'972 laminate.

This is in distinction with the inert protective layer according to the present invention, which has a function of making the metal surface inactive to prevent interlayer separation between the adhesive resin layer and the metal layer due to possible chemical reaction of the metal with the electrolyte permeated thereto. The inactivation given in JP'972 is effected by, for example, coating an inactivating agent, such as vinyl acetate, over the flexible substrate of, for example, a silicone-grafted polyolefin film over the area excluding the pattern to be metal-plated. By immersing the resulting flexible substrate on which the area other than the pattern to be metal-plated is hidden by the inactivating agent coating in a metal-plating liquor, the metal layer is formed in the contemplated pattern on the flexible substrate. There is no overlapping of the inactivating agent coating and the metal-plated layer, since metal-plating proceeds exclusively on the activated surface of the substrate but not on the inactivated region of the surface.

In order to clarify the scope the teachings of JP'972, Applicants enclose herewith an English translation of relevant portions thereof.

Based on the foregoing, Applicants respectfully request that Rejection (A) be withdrawn.

[III-B] Nonaka et al .-

Applicants note that the Examiner judges that the secondary battery given in Fig. 11 of Nonaka et al has the same lamination structure as that according to the present invention.

However, the structure of the secondary battery shown in Fig. 11 of Nonaka et al discloses a laminate clearly distinct from the laminate according to the present invention, since the separator 5 is not an adhesive layer firmly adhering onto an inert protective or passive film formed by oxidative or acid treatment of the metal layer, so that the Examiner has given the wrong construction to the teachings of Nonaka et al.

In Nonaka et al, the separator film is described as a porous polypropylene film. There is no disclosure as to the adhesiveness of this layer as is required in the present invention. In fact, it appears that adhesive properties are not intended by Nonaka et al. Nonaka et al. teach that: "The separator is formed of an appropriate thin material that is insulating and water-permeable, such as glass-fiber woven or non-woven cloth." See paragraph 0093. Also, it is clear that this separator of Nonaka et al. is not modified by a carboxyl group or is a derivative of a polyolefin modified by a carboxyl group, as is required by the inventive claims.

Moreover, Nonaka et al do not teach any positive surface treatment of the metal layer, but teach the positive destruction of the passive oxide film by carbon particles piercing through the oxide layer for facilitating electric conduction between the metal layer and the electrode layer.

In response, the Examiner believes that the disclosure at paragraph 0015 of a natural oxide layer on the Al film is sufficient to meet the instant limitation for the oxide layer.

In response to the Examiner's position, Applicants respectfully submit that the experimental evidence in the present specification shows that the instant oxidized metal surface is structurally distinct from an oxidized metal surface obtained from simple exposure to air as in Nonaka et al. The relevant data of the table on page 26 is provided herein for the Examiner's convenience.

Table 1

	Adhesive Strength (N/15 mm)	
	Before Immersion	After Imm.
I. Inventive Example		
1	8.0	4.5
2	Unpeelable*	Unpeelable
3	Unpeelable*	Unpeelable
4	Unpeelable*	3.3
5	Unpeelable*	6.8
Comparative Example		
1	Unpeelable*	0 (peeled)
2	Unpeelable*	0 (peeled)
3	Unpeelable*	0 (peeled)
4	Unpeelable*	0 (peeled)
5	Unpeelable*	0 (peeled)

Note: * substrate destroyed

In each of the Inventive Examples 1-5, the metal layer has been surface treated prior to the addition of the adhesive resin layer. This is in contrast to the laminates of Comparative Examples 1-5 which were prepared with the adhesive resin layer bonded directly to a cleaned (by ultrasonic cleaning) aluminum plate surface which has not been pretreated. It is believed that the cleaned aluminum plate surface would have an oxide surface similar to the oxide surface of Nonaka et al. As can be seen in the above-Table, the durability immersion test shows that the adhesive strength of the adhesive resin layer is much lower when the adhesive resin layer is bonded to an untreated surface. In each of the Comparative Examples which have a non-treated surface layer, there was no adhesive strength registered, whereas in the Inventive Examples 1-5, the adhesive strength was at least 3.3 N/15mm. Accordingly, there is a structural distinction between the inventive laminate and the laminate of the cited references which do not teach a surface treatment step of the metal layer prior to addition of the maleic acid modified polyolefin.

Accordingly, the laminate of the present invention provides an unexpected technical advantage of improving the adhesion strength of the adhesive resin onto the metal layer of the laminate, whereby resistance of the laminate to interlayer separation between the metal layer and the adhesive layer due to penetration of salt molecules onto the metal layer from electrolyte, in particular, non-aqueous electrolyte, of a battery can favorably be improved. Such an advantageous effect is attained by forming an inert protective or passive film on the metal layer by an oxidative or chemical treatment of the metal layer.

The laminates of Nonaka et al. are lacking such an inert or passive film on the metal layer and correspond to the laminates of Comparative Examples given in the specification of the present invention and, thus, exhibit inferior adhesion strength than that of the laminates according to the present invention. In Nonaka et al., there is no suggestion as to the adhesion performance improvement as was found by the superior efforts and ingenuity of the present inventors.

Based on the foregoing, significant patentable distinctions exist between the present invention and the teachings of Nonaka et al.

[III-C] JP '808-

The Examiner believes that JP '808 teaches the following construction of a laminate:

Polymer layer 10
Adhesive layer
Metal deposition layer (he equates to the instant metal oxide layer)
Aluminum
Adhesive layer
Polymer layer 11

The Examiner relies on the abstract wherein it is disclosed that the metal layer between the plastic layers is "such as an aluminum foil and a metal deposition layer." The Examiner believes that this disclosure means that an aluminum layer and a separate metal deposition layer are between the two plastic layers.

Applicants respectfully disagree. As evidence of the disclosure of JP'808, Applicants enclose herewith an English translation of the relevant portions of JP'808. The Examiner will note from paragraph [0010] that JP'808 teaches that the metal layer is either an aluminum foil or metal deposition layer. Accordingly, JP'808 fails to teach or fairly suggest the use of both an aluminum foil and metal deposition layer at the same time as is required by the claims. Accordingly, the presently claimed invention is patentably distinct from JP'808.

In view of foregoing, Applicants respectfully submit that the presently claimed invention is patentably distinct from JP'972, Nonaka et al. and JP'808 (in any combination). As such, withdrawal of the Rejections (A), (B) and (C) are respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq. (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Dated: May 17, 2006

Respectfully submitted,

By _____

Marc S. Weiner
Registration No.: 32,181
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Attachments: English translation of relevant portions of JP'972
English translation of relevant portions of JP'808

MSW/GMD/mua